WHAT IS CLAIMED IS:

1. A nozzle for use in fluid treatment system having a processing medium, the nozzle being immersed in the medium to withdraw a flow of fluid from the medium, the nozzle comprising:

an outer screen including a plurality of screen openings collectively having a screen open area, the outer screen defining an interior cavity;

a duct in fluid communication with the cavity; and

a flow restrictor for limiting the flow rate between the cavity and the duct, the flow restrictor including a tube extending from the duct into the interior cavity, and at least one orifice disposed in the tube providing fluid communication between the cavity and the duct, the total orifice area being less than the total screen open area.

2. The nozzle according to claim 1, wherein the orifice is disposed at an angle non-perpendicular to a central axis of the tube.

3. The nozzle according to claim 2, wherein the orientation of the orifice is such that a flow of fluid from the orifice into the cavity is directed toward a bottom portion of the screen.

4. The nozzle according to claim 1, wherein the orifice is disposed generally perpendicularly to a central axis of the tube.

5. The nozzle according to claim 1, including multiple orifices disposed at different radial orientations around the tube.

6. The nozzle according to claim 1, wherein the screen is generally cylindrical, the nozzle further comprising an end cap mounted to a bottom of the screen.

7. The nozzle according to claim 1, wherein the screen is generally cylindrical, the nozzle further comprising an end cap mounted to a bottom of the screen, wherein the restrictor further comprises an end wall mounted to an end of the tube, the end wall being spaced from the end cap.

8. The nozzle according to claim 1, wherein the screen is generally cylindrical, the nozzle further comprising an end cap mounted to a bottom of the screen, and wherein the generally cylindrical wall extends to the end cap.

9. The nozzle according to claim 1, further comprising an auxiliary fluid duct for providing flow of an auxiliary fluid, the auxiliary duct in communication with the interior cavity and an auxiliary restrictor for limiting the flow rate between the cavity and the auxiliary fluid duct, the restrictor including at least one orifice providing fluid communication between the cavity and the duct, the at least one auxiliary orifice having a collective open area less than the screen open area.

10. The nozzle according to claim 9, wherein the auxiliary restrictor includes a tube positioned within the interior cavity, the at least one orifice being disposed in the wall.

11. The nozzle according to claim 10, wherein the auxiliary restrictor further includes a check valve mounted upstream of the tube to permit one-way flow away from the auxiliary orifice.

12. A fluid treatment system comprising:

a vessel, wherein a granular processing medium occupies at least a lower portion of the vessel;

an upper manifold for introducing fluid into the vessel above the processing medium; and

a lower manifold for withdrawing fluid from the medium, the manifold including a fluid exit duct, and a plurality of nozzles immersed in the medium, each of the nozzles being in communication with the fluid exit duct, each of the nozzles having an external screen having a plurality of screen openings having a collective exterior open area and the screen defining an internal cavity, and a flow restrictor providing fluid communication between the interior cavity and the duct, the flow restrictor having a generally cylindrical wall positioned within the interior cavity, at least one orifice being disposed in the wall, the at least one orifice collectively having a total orifice area, wherein the total orifice area is less than the exterior open area.

13. The invention according to claim 12, wherein each of the nozzles further includes an auxiliary duct, an auxiliary restrictor having at least one auxiliary orifice providing communication between the auxiliary duct and the interior cavity, and wherein the vessel further comprises an auxiliary manifold in communication with the auxiliary duct.

14. The invention according to claim 12, wherein the orifice is disposed at an angle non-perpendicular to an axis of the cylindrical wall.

15. The invention according to claim 12, including multiple orifices disposed at different radial orientations around the wall.

16. The invention according to claim 12, wherein the orifice is disposed generally perpendicularly to a central axis of the cylindrical wall.

17. A process for treating a fluid, the process comprising the steps of:

a providing a vessel having an inner chamber, the chamber containing a processing medium through which fluid can pass:

introducing the process fluid into the chamber above the medium:

providing a manifold including a plurality of nozzles in communication with an outlet, each of the nozzles including an outer screen defining an interior cavity, the screen having a plurality of screen openings having a collective screen opening area, a duct, and a restrictor having at least one orifice providing fluid communication between the duct and the interior cavity, the at least one orifice positioned generally within the interior cavity and having a collective orifice area less than the screen opening area; and

withdrawing fluid from the medium into the nozzle through the screen openings so that the fluid flows across the interior cavity, through the orifice and into the duct.

18. The process according to claim 17 further comprising:

ceasing the introducing of process fluid:

introducing a reconditioning fluid into the medium: and

withdrawing the reconditioning fluid into the nozzle through the screen openings so that the fluid flows across the interior cavity, through the at least one orifice and into the duct.

19. The process according to claim 17, further comprising:

providing the nozzle with an auxiliary duct and an auxiliary restrictor having at least one auxiliary orifice with a total orifice area less than the screen

opening area, the orifice providing fluid communication between the auxiliary duct and the interior cavity;

ceasing the introducing of process fluid;

introducing a reconditioning fluid into the medium; and

withdrawing the reconditioning fluid into the nozzle through the screen openings so that the fluid flows across the interior cavity, through the at least one auxiliary orifice and into the auxiliary duct.

20. The process according to claim 17 wherein the medium is an ion exchange resin, the process further comprising demineralizing the process fluid as it flows through the medium.

21. The process according to claim 17, wherein the medium is a slurry, wherein the withdrawing step further results in removing moisture from the slurry.

22. The process according to claim 21, further comprising the step of forcing liquid outwardly through the screen openings to clean the openings.

23. A nozzle for use in a system for withdrawing fluid from a medium, wherein the system includes more than one of the nozzles connected to a common manifold, each of the nozzles comprising: an outer screen defining an interior cavity, the screen including a plurality of screen openings, the screen defining an interior cavity; a duct providing fluid communication between the manifold and the interior cavity; and a flow restrictor extending from the duct into the interior cavity, the flow restrictor including at lest one orifice positioned within the interior cavity providing fluid communication between the cavity and the duct, the total orifice area being less than the total screen open area.